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SEQUENCE LISTING

<110> RHODES, Simon J.
BRIDWELL, Jeanne L.
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PRICE, Jeffrey R.
SHOWALTER, Aaron D.
SLOOP, Kyle W.

<120> GENERATION OF DIAGNOSTIC TOOLS TO ASSAY THE HUMAN LHX3/P-LIM/LIM-3 FACTOR

<130> 053884-5003

<140> NOT YET ASSIGNED
<141> 2001-08-17

<150> PCT/US00/04424
<151> 2000-02-22

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         35                  40                  45

Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser Leu Tyr Cys Lys
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Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Leu
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Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln Asp Phe Val Tyr
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His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg Gln Leu Ala Thr
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Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala
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Ala Leu Asp Arg His Trp His Ser Lys Cys Leu Lys Cys Ser Asp Cys
    50                  55                  60

His Val Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser Val Tyr
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Cys Lys Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys
                85                  90                  95

Gln Leu Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln Asp Phe
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Val Tyr His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg Gln Leu
        115                 120                 125
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Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu Val Cys
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Lys Ala Asp Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala Thr Ala
145                 150                 155                 160

Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys
                165                 170                 175

Ser Ala Tyr Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg Glu Gln
            180                 185                 190

Leu Ser Ser Glu Thr Gly Leu Asp Arg Val Val Gln Val Trp Phe Gln
        195                 200                 205

Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln
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Arg Trp Gly Gln Tyr Phe Arg Asn Met Lys Arg Ser Arg Gly Ser Ser
225                 230                 235                 240

Lys Ser Asp Lys Asp Ser Ile Gln Glu Gly Gln Asp Ser Asp Ala Glu
                245                 250                 255

Val Ser Phe Thr Asp Glu Pro Ser Met Ala Asp Met Gly Pro Ala Asn
            260                 265                 270

Gly Leu Tyr Ser Ser Leu Gly Glu Pro Ala Pro Ala Leu Gly Arg Pro
        275                 280                 285

Val Gly Gly Leu Gly Ser Phe Thr Leu Asp His Gly Gly Leu Thr Gly
    290                 295                 300

Pro Glu Gln Tyr Arg Glu Leu Arg Pro Gly Ser Pro Tyr Gly Ile Pro
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Ser Ser Leu Val Tyr Pro Asp Thr Asn Leu Ser Leu Val Pro Ser Gly
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Pro Pro Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly Asn Gly Pro
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     50                  55                  60

Lys Cys Phe Ser Arg Gly Asp Gly Val Tyr Cys Lys Glu Asp Phe Phe
 65                  70                  75                  80

Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Gln Gly Ile Pro Pro
                 85                  90                  95

Thr Gln Val Val Arg Arg Ala Gln Asp Phe Val Tyr His Leu His Cys
            100                 105                 110

Phe Ala Cys Ile Val Cys Lys Arg Gln Leu Ala Thr Gly Asp Glu Phe
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Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala Asp Tyr Glu Thr
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Ala Lys Gln Arg Glu Ala Glu Ser Thr Ala Lys Arg Pro Arg Thr Thr
145                 150                 155                 160

Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys Asn Ala Tyr Asn Asn Ser
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Pro Lys Pro Ala Arg His Val Arg Glu Gln Leu Ser Ser Glu Thr Gly
            180                 185                 190

Leu Asp Met Arg Val Val Gln Val Trp Phe Gln Asn Arg Arg Ala Lys
        195                 200                 205

Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln Arg Trp Gly Gln Tyr
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Phe Arg Asn Met Lys Arg Ser Arg Gly Thr Ser Lys Ser Asp Lys Asp
225                 230                 235                 240

Ser Ile Gln Glu Glu Gly Pro Asp Ser Asp Ala Glu Val Ser Phe Thr
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Asp Glu Pro Ser Met Ser Glu Met Ser His Ser Asn Gly Ile Tyr Ser
            260                 265                 270

Asn Leu Ser Glu Ala Ser Pro Ala Leu Gly Arg Gln Ala Gly Thr Asn
        275                 280                 285

Gly Gly Phe Ser Leu Asp His Ser Gly Ile Pro Ala Gln Asp Gln Tyr
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His Asp Leu Arg Ser Asn Ser Pro Tyr Gly Ile Pro Gln Ser Pro Ala
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Tyr Pro Asp Ser Gly Leu Gly Ile Met Gly Gln Gly Gly Gln Gly Val
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Pro Gln Ser Met Arg Val Leu Ala Gly Asn Gly Pro Ser Ser Asp Leu
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Gln His Ile Val Asp Arg Phe Ile Leu Lys Val Leu Asp Arg His Trp
         35                  40                  45

His Ser Lys Cys Leu Lys Cys Asn Asp Cys Gln Ile Gln Leu Ala Glu
     50                  55                  60

Lys Cys Phe Ser Arg Gly Asp Ser Val Tyr Cys Lys Asp Asp Phe Phe
 65                  70                  75                  80

Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Gln Gly Ile Pro Pro
                85                  90                  95

Thr Gln Val Val Arg Arg Ala Gln Glu Phe Val Tyr His Leu His Cys
            100                 105                 110

Phe Ala Cys Ile Val Cys Lys Arg Gln Leu Ala Thr Gly Asp Glu Phe
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Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala Asp Tyr Glu Thr
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Ala Lys Gln Arg Glu Ala Glu Ser Thr Ala Lys Arg Pro Arg Thr Thr
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Pro Lys Pro Ala Arg His Val Arg Glu Gln Leu Ser Ser Glu Thr Gly
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Leu Asp Met Arg Val Val Gln Val Trp Phe Gln Asn Arg Arg Ala Lys
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Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln Arg Trp Gly Gln Tyr
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Phe Arg Asn Met Lys Arg Ser Arg Gly Asn Ser Lys Ser Asp Lys Asp
225                 230                 235                 240

Ser Ile Gln Glu Glu Gly Pro Asp Ser Asp Ala Glu Val Ser Phe Thr
                245                 250                 255

Asp Glu Pro Ser Met Ser Glu Met Asn His Ser Asn Gly Ile Tyr Asn
            260                 265                 270

Ser Leu Asn Asp Ser Ser Pro Val Leu Gly Arg Gln Ala Gly Ser Asn
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Gly Pro Phe Ser Leu Glu His Gly Gly Ile Pro Thr Gln Asp Gln Tyr
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His Asn Leu Arg Ser Asn Ser Pro Tyr Gly Ile Pro Gln Ser Pro Ala
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Ser Leu Gln Ser Met Pro Gly His Gln Ser Leu Leu Ser Asn Leu Ala
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Phe Pro Asp Thr Gly Leu Gly Ile Ile Gly Gln Gly Gly Gln Gly Val
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Ala Pro Thr Met Arg Val Ile Gly Val Asn Gly Pro Ser Ser Asp Leu
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Lys Cys Phe Ser Arg Gly Asp Ser Val Tyr Cys Lys Asp Asp Phe Phe
 65                  70                  75                  80

Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Gln Gly Ile Pro Pro
                 85                  90                  95

Thr Gln Val Val Arg Arg Ala Gln Asp Phe Val Tyr His Leu His Cys
            100                 105                 110

Phe Ala Cys Ile Val Cys Lys Arg Gln Leu Ala Thr Gly Asp Glu Tyr
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Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala Asp Tyr Glu Thr
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Ala Lys Gln Arg Glu Ala Asp Ser Thr Ala Lys Arg Pro Arg Thr Thr
145                 150                 155                 160

Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys Asn Ala Tyr Asn Asn Ser
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Pro Lys Pro Ala Arg His Val Arg Glu Gln Leu Ser Thr Glu Thr Gly
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Leu Asp Met Arg Val Val Gln Val Trp Phe Gln Asn Arg Arg Ala Lys
        195                 200                 205

Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln Arg Trp Gly Gln Tyr
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Phe Arg Asn Met Lys Arg Ser Arg Gly Thr Ser Lys Ser Asp Lys Asp
225                 230                 235                 240

Ser Thr Gln Glu Asp Gly Met Asp Ser Asp Ala Glu Val Ser Phe Thr
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Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser Val Tyr Cys Lys Asp
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Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Leu Gly
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Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln Asp Phe Val Tyr His
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Leu His Cys Phe Ala Cys Val Val Cys Lys Arg Gln Leu Ala Thr Gly
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Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala Asp
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Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala Thr Ala Lys Arg Pro
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Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys Ser Ala Tyr
165 170 175

Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg Glu Gln Leu Ser Ser
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Glu Thr Gly Leu Asp Met Arg Val Val Gln Val Trp Phe Gln Asn Arg
195 200 205

Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln Arg Trp

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Phe Pro Asp Glu Pro Ser Leu Ala Glu Met Gly Pro Ala Asn Gly Leu
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Tyr Gly Ser Leu Gly Glu Pro Thr Gln Ala Leu Gly Arg Pro Ser Gly
        275                 280                 285

Ala Leu Gly Asn Phe Ser Leu Glu His Gly Gly Leu Ala Gly Pro Glu
    290                 295                 300

Gln Tyr Arg Glu Leu Arg Pro Gly Ser Pro Tyr Gly Val Pro Pro Ser
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Pro Ala Ala Pro Gln Ser Leu Pro Gly Pro Gln Pro Leu Leu Ser Ser
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Leu Val Tyr Pro Asp Thr Ser Leu Gly Leu Val Pro Ser Gly Ala Pro
            340                 345                 350

Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly Asn Gly Pro Ser Ser
        355                 360                 365

Asp Leu Ser Thr Gly Ser Ser Gly Gly Tyr Pro Asp Phe Pro Ala Ser
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<210> 12
<211> 402
<212> PRT
<213> Homo sapiens

<400> 12

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Met Glu Ala Arg Gly Glu Leu Gly Pro Ala Arg Glu Ser Ala Gly Gly
  1               5                  10                  15

Asp Leu Leu Leu Ala Leu Leu Ala Arg Arg Ala Asp Leu Arg Arg Glu
             20                  25                  30

Ile Pro Leu Cys Ala Gly Cys Asp Gln His Ile Leu Asp Arg Phe Ile
         35                  40                  45

Leu Lys Ala Leu Asp Arg His Trp His Ser Lys Cys Leu Lys Cys Ser
     50                  55                  60

Asp Cys His Thr Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser
 65                  70                  75                  80

Val Tyr Cys Lys Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala
                 85                  90                  95

Ala Cys Gln Leu Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln
            100                 105                 110

Asp Phe Val Tyr His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg
        115                 120                 125

Gln Leu Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu
    130                 135                 140
```

```
Val Cys Lys Ala Asp Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala
145                 150                 155                 160

Thr Ala Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr
                165                 170                 175

Leu Lys Ser Ala Tyr Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg
            180                 185                 190

Glu Gln Leu Ser Ser Glu Thr Gly Leu Asp Met Arg Val Val Gln Val
        195                 200                 205

Trp Phe Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala
    210                 215                 220

Gly Arg Gln Arg Trp Gly Gln Tyr Phe Arg Asn Met Lys Arg Ser Arg
225                 230                 235                 240

Gly Gly Ser Lys Ser Asp Lys Asp Ser Val Gln Glu Gly Gln Asp Ser
                245                 250                 255

Asp Ala Glu Val Ser Phe Pro Asp Glu Pro Ser Leu Ala Glu Met Gly
            260                 265                 270

Pro Ala Asn Gly Leu Tyr Gly Ser Leu Gly Glu Pro Thr Gln Ala Leu
        275                 280                 285

Gly Arg Pro Ser Gly Ala Leu Gly Asn Phe Ser Leu Glu His Gly Gly
    290                 295                 300

Leu Ala Gly Pro Glu Gln Tyr Arg Glu Leu Arg Pro Gly Ser Pro Tyr
305                 310                 315                 320

Gly Val Pro Pro Ser Pro Ala Ala Pro Gln Ser Leu Pro Gly Pro Gln
                325                 330                 335

Pro Leu Leu Ser Ser Leu Val Tyr Pro Asp Thr Ser Leu Gly Leu Val
            340                 345                 350

Pro Ser Gly Ala Pro Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly
        355                 360                 365

Asn Gly Pro Ser Ser Asp Leu Ser Thr Gly Ser Ser Gly Gly Tyr Pro
    370                 375                 380

Asp Phe Pro Ala Ser Pro Ala Ser Trp Leu Asp Glu Val Asp His Ala
385                 390                 395                 400

Gln Phe
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<210> 13
<211> 1658
<212> DNA
<213> Sus scrofa

<400> 13
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tgcagtgact gccacacgcc gctggccgag cgctgcttca gccgcggaga gagcctctac 240
tgcaaggacg acttcttcaa gcgcttcggg accaagtgcg ccgcgtgcca gctgggcatc 300
ccgcccacgc aggtggtgcg ccgcgcccag gacttcgtgt accacctgca ctgcttcgcc 360
tgcgtcgtgt gcaagcggca gctggccacg ggcgacgagt tctacctcat ggaggacagc 420
cggctcgtgt gcaaggccga ctacgagacc gccaagcagc gagaggccga ggccacggcc 480
aagcggccgc gcacgaccat cacggccaag cagctggaga cgctgaagag cgcctacaac 540
acgtcgccca agcccgcgcg ccacgtgcgc gagcagctct cctccgagac cggcctggac 600
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gacgccggcc ggcagcgctg gggccagtac tttcgtaaca tgaagcgcgc ccgcggtggc 720
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gtgcttccat ttcccagctt cctctgtcta gttctgcc 1658

<210> 14
<211> 401
<212> PRT
<213> Sus scrofa

<400> 14
Met Leu Leu Glu Thr Glu Leu Ala Gly Asp Arg Asp Arg Pro Gly Ala
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Pro Ala Ala Ala Ala Val Cys Thr Leu Pro Gly Thr Arg Glu Ile Pro
20 25 30

Leu Cys Ala Gly Cys Asp Gln His Ile Leu Asp Arg Phe Ile Leu Lys
35 40 45

Ala Leu Asp Arg His Trp His Ser Lys Cys Leu Lys Cys Ser Asp Cys
50 55 60

His Thr Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser Leu Tyr
65 70 75 80

Cys Lys Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys
85 90 95

Gln Leu Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln Asp Phe
100 105 110

Val Tyr His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg Gln Leu
115 120 125

Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu Val Cys
130 135 140

Lys Ala Asp Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala Thr Ala
145 150 155 160

Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys
165 170 175

Ser Ala Tyr Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg Glu Gln
180 185 190

Leu Ser Ser Glu Thr Gly Leu Asp Met Arg Val Val Gln Val Trp Phe
195 200 205

Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg
210 215 220

Gln Arg Trp Gly Gln Tyr Phe Arg Asn Met Lys Arg Ala Arg Gly Gly
225 230 235 240

Ser Lys Ser Asp Lys Asp Ser Val Gln Glu Glu Gly Gln Asp Ser Asp
245 250 255

Ala Glu Val Ser Phe Thr Asp Glu Pro Ser Met Ala Glu Met Gly Pro
260 265 270

Ala Asn Gly Leu Tyr Gly Gly Leu Gly Glu Pro Ala Pro Ala Leu Gly
275 280 285

Arg Pro Ser Gly Ala Pro Gly Ser Phe Pro Leu Glu His Gly Gly Leu
290 295 300

Ala Gly Pro Glu Gln Tyr Gly Glu Leu Arg Pro Ser Ser Pro Tyr Gly
305 310 315 320

Val Pro Ser Ser Pro Ala Ala Leu Gln Ser Leu Pro Gly Pro Gln Pro
325 330 335

Leu Leu Ser Ser Leu Val Tyr Pro Glu Ala Gly Leu Gly Leu Val Pro
340 345 350

Ala Gly Pro Pro Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly Asn
355 360 365

Gly Pro Ser Ser Asp Leu Ser Thr Gly Ser Ser Gly Gly Tyr Pro Asp
370 375 380

Phe Pro Ala Ser Pro Ala Ser Trp Leu Asp Glu Val Asp His Ala Gln
385 390 395 400

Phe

<210> 15
<211> 1664
<212> DNA
<213> Sus scrofa

<400> 15
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gcgctgctgg cgcggaggga ggacctgcgc cgagagatcc cactgtgtgc cggctgcgac 120
cagcacatcc tggaccgctt catcctcaag gctctggacc gccactggca cagcaagtgc 180
ctcaagtgca gtgactgcca cacgccgctg gccgagcgct gcttcagccg cggagagagc 240
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ggcatcccgc ccacgcaggt ggtgcgccgc gcccaggact tcgtgtacca cctgcactgc 360
ttcgcctgcg tcgtgtgcaa gcggcagctg gccacgggcg acgagttcta cctcatggag 420
gacagccggc tcgtgtgcaa ggccgactac gagaccgcca agcagcgaga ggccgaggcc 480
acggccaagc ggccgcgcac gaccatcacg gccaagcagc tggagacgct gaagagcgcc 540
tacaacacgt cgcccaagcc cgcgcgccac gtgcgcgagc agctctcctc cgagaccggc 600
ctggacatgc gcgtcgtgca ggtgtggttc cagaaccgcc gggccaagga aaagcggctc 660
aagaaggacg ccggccggca gcgctggggc cagtactttc gtaacatgaa gcgcgcccgc 720
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ctgctctttc tagaccggag tggtcagccc ccgaagccgg ggaggggggc tctccccagc 1560
ccagagcagc acagccctca gactggaaga tgctttaatt tttaaaatta aaaaataata 1620
cgaactgtgc ttccatttcc cagcttcctc tgtctagttc tgcc 1664

<210> 16
<211> 403
<212> PRT
<213> Sus scrofa

<400> 16
Met Glu Ala Arg Gly Glu Leu Gly Pro Ser Arg Glu Ser Ala Gly Gly
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Asp Leu Leu Leu Ala Leu Leu Ala Arg Arg Glu Asp Leu Arg Arg Glu
20 25 30

Ile Pro Leu Cys Ala Gly Cys Asp Gln His Ile Leu Asp Arg Phe Ile
35 40 45

Leu Lys Ala Leu Asp Arg His Trp His Ser Lys Cys Leu Lys Cys Ser
50 55 60

Asp Cys His Thr Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser

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 65                  70                  75                  80

Leu Tyr Cys Lys Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala
                 85                  90                  95

Ala Cys Gln Leu Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln
            100                 105                 110

Asp Phe Val Tyr His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg
        115                 120                 125

Gln Leu Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu
    130                 135                 140

Val Cys Lys Ala Asp Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala
145                 150                 155                 160

Thr Ala Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr
                165                 170                 175

Leu Lys Ser Ala Tyr Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg
            180                 185                 190

Glu Gln Leu Ser Ser Glu Thr Gly Leu Asp Met Arg Val Val Gln Val
        195                 200                 205

Trp Phe Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala
    210                 215                 220

Gly Arg Gln Arg Trp Gly Gln Tyr Phe Arg Asn Met Lys Arg Ala Arg
225                 230                 235                 240

Gly Gly Ser Lys Ser Asp Lys Asp Ser Val Gln Glu Glu Gly Gln Asp
                245                 250                 255

Ser Asp Ala Glu Val Ser Phe Thr Asp Glu Pro Ser Met Ala Glu Met
            260                 265                 270

Gly Pro Ala Asn Gly Leu Tyr Gly Gly Leu Gly Glu Pro Ala Pro Ala
        275                 280                 285

Leu Gly Arg Pro Ser Gly Ala Pro Gly Ser Phe Pro Leu Glu His Gly
    290                 295                 300

Gly Leu Ala Gly Pro Glu Gln Tyr Gly Glu Leu Arg Pro Ser Ser Pro
305                 310                 315                 320

Tyr Gly Val Pro Ser Ser Pro Ala Ala Leu Gln Ser Leu Pro Gly Pro
                325                 330                 335

Gln Pro Leu Leu Ser Ser Leu Val Tyr Pro Glu Ala Gly Leu Gly Leu
            340                 345                 350

Val Pro Ala Gly Pro Pro Gly Gly Pro Pro Pro Met Arg Val Leu Ala
        355                 360                 365

Gly Asn Gly Pro Ser Ser Asp Leu Ser Thr Gly Ser Ser Gly Gly Tyr
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370 375 380

Pro Asp Phe Pro Ala Ser Pro Ala Ser Trp Leu Asp Glu Val Asp His
385 390 395 400

Ala Gln Phe

<210> 17
<400> 17
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<210> 18
<400> 18
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<210> 19
<211> 440
<212> PRT
<213> Drosophila melanogaster

<400> 19
Met Glu Leu Leu Lys Leu Met Met Phe Lys Ser Asp Phe Leu Ser Asn
1 5 10 15

Gly Lys Cys Asp Asp Arg Val Pro Pro Ile Asn Leu Ser Gln Leu Pro
20 25 30

Glu Phe Leu Leu Ser Thr Ile Pro Lys Cys Gly Gly Cys His Glu Leu
35 40 45

Ile Leu Asp Arg Phe Ile Leu Lys Val Leu Glu Arg Thr Trp His Ala
50 55 60

Lys Cys Leu Gln Cys Ser Glu Cys His Gly Gln Leu Asn Asp Lys Cys
65 70 75 80

Phe Ala Arg Asn Gly Gln Leu Phe Cys Lys Glu Asp Phe Phe Lys Arg
85 90 95

Tyr Gly Thr Lys Cys Ser Ala Cys Asp Met Gly Ile Pro Pro Thr Gln
100 105 110

Val Val Arg Arg Ala Gln Asp Asn Val Tyr His Leu Gln Cys Phe Leu
115 120 125

Cys Ala Met Cys Ser Arg Thr Leu Asn Thr Gly Asp Glu Phe Tyr Leu
130 135 140

Met Glu Asp Arg Lys Leu Ile Cys Lys Arg Asp Tyr Glu Glu Ala Lys
145 150 155 160

Ala Lys Gly Leu Tyr Leu Asp Gly Ser Leu Asp Gly Asp Gln Pro Asn
165 170 175

```
Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys
            180                 185                 190

Thr Ala Tyr Asn Asn Ser Pro Lys Pro Ala Arg His Val Arg Glu Gln
        195                 200                 205

Leu Ser Gln Asp Thr Gly Leu Asp Met Arg Val Val Gln Val Trp Phe
    210                 215                 220

Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg
225                 230                 235                 240

Thr Arg Trp Ser Gln Tyr Phe Arg Ser Met Lys Gly Asn Cys Ser Pro
                245                 250                 255

Arg Thr Asp Lys Phe Leu Asp Lys Asp Glu Leu Lys Val Asp Tyr Asp
            260                 265                 270

Ser Phe Ser His His Asp Leu Ser Asn Asp Ser Tyr Ser Thr Val Asn
        275                 280                 285

Leu Gly Leu Asp Glu Gly Ala Ser Pro His Ser Ile Arg Gly Ser Tyr
    290                 295                 300

Met His Gly Ser Ser Ser Pro Ser Gln Tyr Pro Pro Ser Ser Arg Ser
305                 310                 315                 320

Pro Pro Pro Val Gly Gln Gly His Thr Phe Gly Ser Tyr Pro Asp Asn
                325                 330                 335

Ile Val Tyr Thr Asn Ile Asp Gln Ala Val Gly Ser Ser Leu His Ala
            340                 345                 350

Ser Lys Ala His His Arg Leu His Ser Ser Asn Asn Val Ser Asp Leu
        355                 360                 365

Ser Asn Asp Ser Ser Pro Asp Gln Gly Tyr Pro Asp Phe Pro Pro Ser
    370                 375                 380

Pro Asp Ser Trp Leu Gly Asp Ser Gly Ser Thr Asn Thr Thr Ser Ala
385                 390                 395                 400

Asn Asn Asn Ala Asn Asn Asn Ser Ser Arg Ser His Asn Asn Asn Asn
                405                 410                 415

Ser Ser Gly Gly Gly Ser Gly Gly Val Ser Val Ser Thr Ala Pro Asn
            420                 425                 430

Pro Ser Ala Pro Gly Val His Tyr
        435                 440
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<210> 20
<211> 367
<212> PRT
<213> Mus musculus

<400> 20

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Met Gln Gln Ile Pro Gln Cys Ala Gly Cys Asn Gln His Ile Leu Asp
 1               5                  10                  15

Lys Phe Ile Leu Lys Val Leu Asp Arg His Trp His Ser Ser Cys Leu
            20                  25                  30

Lys Cys Ala Asp Cys Gln Met Gln Leu Ala Asp Arg Cys Phe Ser Arg
        35                  40                  45

Ala Gly Ser Val Tyr Cys Lys Glu Asp Phe Phe Lys Arg Phe Gly Thr
    50                  55                  60

Lys Cys Thr Ala Cys Gln Gln Gly Ile Pro Pro Thr Gln Val Val Arg
65                  70                  75                  80

Lys Ala Gln Asp Phe Val Tyr His Leu His Cys Phe Ala Cys Ile Ile
                85                  90                  95

Cys Asn Arg Gln Leu Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp
            100                 105                 110

Gly Arg Leu Val Cys Lys Glu Asp Tyr Glu Thr Ala Lys Gln Asn Asp
        115                 120                 125

Asp Ser Glu Ala Gly Ala Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys
    130                 135                 140

Gln Leu Glu Thr Leu Lys Asn Ala Tyr Lys Asn Ser Pro Lys Pro Ala
145                 150                 155                 160

Arg His Val Arg Glu Gln Leu Ser Ser Glu Thr Gly Leu Asp Met Arg
                165                 170                 175

Val Val Gln Val Trp Phe Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu
            180                 185                 190

Lys Lys Asp Ala Gly Arg His Arg Trp Gly Gln Phe Tyr Lys Ser Val
        195                 200                 205

Lys Arg Ser Arg Gly Gly Ser Lys Gln Glu Lys Glu Ser Ser Ala Glu
    210                 215                 220

Asp Cys Gly Val Ser Asp Ser Glu Leu Ser Phe Arg Glu Asp Gln Ile
225                 230                 235                 240

Leu Ser Glu Leu Gly His Thr Asn Arg Ile Tyr Gly Asn Val Gly Asp
                245                 250                 255

Val Thr Gly Gly Gln Leu Met Asn Gly Ser Phe Ser Met Asp Gly Thr
            260                 265                 270

Gly Gln Ser Tyr Gln Asp Leu Arg Asp Gly Ser Pro Tyr Gly Ile Pro
        275                 280                 285

Gln Ser Pro Ser Ser Ile Ser Ser Leu Pro Ser His Ala Pro Leu Leu
```

```
    290                 295                 300

Asn Gly Leu Asp Tyr Thr Val Asp Ser Asn Leu Gly Ile Ile Ala His
305                 310                 315                 320

Ala Gly Gln Gly Val Ser Gln Thr Leu Arg Ala Met Ala Gly Gly Pro
                325                 330                 335

Thr Ser Asp Leu Ser Thr Gly Ser Ser Val Gly Tyr Pro Asp Phe Pro
            340                 345                 350

Thr Ser Pro Ala Ser Trp Leu Asp Glu Met Asp His Pro Pro Phe
        355                 360                 365
```

<210> 21
<211> 402
<212> PRT
<213> Mus musculus

<400> 21

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Met Glu Ala Arg Gly Glu Leu Gly Pro Ala Arg Glu Ser Ala Gly Gly
  1               5                  10                  15

Asp Leu Leu Leu Ala Leu Leu Ala Arg Arg Ala Asp Leu Arg Arg Glu
             20                  25                  30

Ile Pro Met Cys Ala Gly Cys Asp Gln His Ile Leu Asp Arg Phe Ile
         35                  40                  45

Leu Lys Ala Leu Asp Arg His Trp His Ser Lys Cys Leu Lys Cys Ser
     50                  55                  60

Asp Cys His Val Pro Leu Ala Glu Arg Cys Phe Ser Arg Gly Glu Ser
 65                  70                  75                  80

Val Tyr Cys Lys Asp Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala
                85                  90                  95

Ala Cys Gln Leu Gly Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln
            100                 105                 110

Asp Phe Val Tyr His Leu His Cys Phe Ala Cys Val Val Cys Lys Arg
        115                 120                 125

Gln Leu Ala Thr Gly Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu
    130                 135                 140

Val Cys Lys Ala Asp Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala
145                 150                 155                 160

Thr Ala Lys Arg Pro Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr
                165                 170                 175

Leu Lys Ser Ala Tyr Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg
            180                 185                 190
```

```
Glu Gln Leu Ser Ser Glu Thr Gly Leu Asp Met Arg Val Val Gln Val
        195                 200                 205

Trp Phe Gln Asn Arg Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala
    210                 215                 220

Gly Arg Gln Arg Trp Gly Gln Tyr Phe Arg Asn Met Lys Arg Ser Arg
225                 230                 235                 240

Gly Ser Ser Lys Ser Asp Lys Asp Ser Ile Gln Glu Gly Gln Asp Ser
                245                 250                 255

Asp Ala Glu Val Ser Phe Thr Asp Glu Pro Ser Met Ala Asp Met Gly
            260                 265                 270

Pro Ala Asn Gly Leu Tyr Ser Ser Leu Gly Glu Pro Ala Pro Ala Leu
        275                 280                 285

Gly Arg Pro Val Gly Gly Leu Gly Ser Phe Thr Leu Asp His Gly Gly
    290                 295                 300

Leu Thr Gly Pro Glu Gln Tyr Arg Glu Leu Arg Pro Gly Ser Pro Tyr
305                 310                 315                 320

Gly Ile Pro Pro Ser Pro Ala Ala Pro Gln Ser Leu Pro Gly Pro Gln
                325                 330                 335

Pro Leu Leu Ser Ser Leu Val Tyr Pro Asp Thr Asn Leu Ser Leu Val
            340                 345                 350

Pro Ser Gly Pro Pro Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly
        355                 360                 365

Asn Gly Pro Ser Ser Asp Leu Ser Thr Glu Ser Ser Ser Gly Tyr Pro
    370                 375                 380

Asp Phe Pro Ala Ser Pro Ala Ser Trp Leu Asp Glu Val Asp His Ala
385                 390                 395                 400

Gln Phe
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<210> 22
<211> 8867
<212> DNA
<213> Homo sapiens

<400> 22
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acctcggagg agcgcgtctc gcgccactcg gcctggtggc cgcgatgctg ctggaaacgg 120
ggctcgagcg cgaccgagcg aggcccgggg ccgccgccgt ctgcaccttg ggcgggactc 180
ggggtaagcc ccagcaggac actgaggaca gaaacggcaa gggcggcaga ggcgcgagga 240
aggggggtgcg tgcagggcca gcggccaggc aaagaaagtc ccgccgctct gcaggcggga 300
cacagagatg gaaactgcag agagtgagtt tccagatccc agggtggcgg ggagggcctg 360
acgctggcct gcaagagtgc gggacagcgg ttggagtgga ggcccctaga aaaaaagggg 420
gcatcgcagg cacagctggg gggcgatggg gccgaccaag gggtgctagg ttcccccggt 480

gaccagtgcc cgtcagctct tgcacacagc ccggcccagg tctctggacc ccacagcagg 540
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ggacgctggg aaataatgga ggcattgttg gagggctggc cagatgccag cagggtgggc 660
cgcctcctta acctggcgcc gccccttccc cagtcctgcc acacacgacc cctgatcgct 720
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cacccgcgtg tccttgccct ggcccttctt gggtaacaag tgctgtgcaa agtgaagggg 840
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ggagggaggg actgtggttt cttgtgccca tccttctggg cctgggccct taaagctcac 960
agtccagaag ccataggcag agtggacaga gtattgctgt gagacccaca gggagaggga 1020
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acagccggct cgtgtgcaag gcggactacg aaaccgccaa gcagcgagag gccgaggcca 480
cggccaagcg gccgcgcacg accatcaccg ccaagcagct ggagacgctg aagagcgctt 540
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tggacatgcg cgtggtgcag gtttggttcc agaaccgccg ggccaaggag aagaggctga 660
agaaggacgc cggccggcag cgctgggggc agtatttccg caacatgaag cgctcccgcg 720

gcggctccaa gtcggacaag gacagcgttc aggaggggca ggacagcgac gctgaggtct 780
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gcagctgtgc gtgccccaga cacaaaggct ggcctgtgtg taagtcaaag tcactcccgc 1980
aaacctgaat ctcgagctac ctattggttc tgtgaatgtt ctgtgtcttt tatttattct 2040
cgggtgatca gctctttcca agctcgtgcc 2070

<210> 28
<211> 26
<212> PRT
<213> Homo sapiens

<400> 28
Met Leu Leu Glu Thr Gly Leu Glu Arg Asp Arg Ala Arg Pro Gly Ala
1 5 10 15

Ala Ala Val Cys Thr Leu Gly Gly Thr Arg
20 25

<210> 29
<211> 31
<212> PRT
<213> Homo sapiens

<400> 29
Met Glu Ala Arg Gly Glu Leu Gly Pro Ala Arg Glu Ser Ala Gly Gly
1 5 10 15

Asp Leu Leu Leu Ala Leu Leu Ala Arg Arg Ala Asp Leu Arg Arg
20 25 30

<210> 30
<400> 30
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<210> 31

<211> 29
<212> PRT
<213> Sus scrofa

<400> 31
Met Leu Leu Glu Thr Glu Leu Ala Gly Asp Arg Asp Arg Pro Gly Ala
1 5 10 15

Pro Ala Ala Ala Ala Val Cys Thr Leu Pro Gly Thr Arg
20 25

<210> 32
<400> 32
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<210> 33
<211> 31
<212> PRT
<213> Sus scrofa

<400> 33
Met Glu Ala Arg Gly Glu Leu Gly Pro Ser Arg Glu Ser Ala Gly Gly
1 5 10 15

Asp Leu Leu Leu Ala Leu Leu Ala Arg Arg Glu Asp Leu Arg Arg
20 25 30

<210> 34
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

<400> 34
atgctgctgg aaacggggct cg 22

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

<400> 35
ccgagtcccg cccaaggtgc 20

<210> 36
<211> 20
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

<400> 36
atggaggcgc gcggggagct 20

<210> 37
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

<400> 37
ctcggcgcag gtctgccctc 20

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

<400> 38
gcgaccgagc gaggcccggg gccgc 25

<210> 39
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Probe

<400> 39
cccggcccgg gagtcggcgg gaggc 25

<210> 40
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Probe

<400> 40
ttccccgatg agccttcctt ggcggaa 27

<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 41
ggcacgagcc ccgcacgacg 20

<210> 42
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:alpha-GSU sequence

<400> 42
gatccggtac ttagctaatt aaatga 26

<210> 43
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Lhx3 consensus binding sequence

<400> 43
gatcccagaa aattaattaa ttgtaa 26

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 44
ggcacgagcc ccgcacgacg 20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 45
tttgaagtct tggaaagtgc 20

<210> 46
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 46
tgacctcgga ggagcgcgtc t 21

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 47
tcgtccttgc agtaaacgct 20

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 48
agcgtttact gcaaggacga 20

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 49
cgcacttggt cccgaagcgc 20

<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 50
gcgcttcggg accaagtgcg 20

<210> 51
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 51
cggggaagga gacctcagcg t 21

<210> 52
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 52
ggacaaggac agcgttcag 19

<210> 53
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 53
ctcccgtaga ggccattg 18

<210> 54
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 54
cgcaagcttc caccatgtgg gaggggcggc cacaggagct g 41

<210> 55

<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 55
cgggatccaa gcagcgagag gccgaggcca cgg 33

<210> 56
<211> 75
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 56
cgcaagcttc caccatggag cagaagctga tcagcgagga ggacctgtgg gaggggcggc 60
cacaggagct gggag 75

<210> 57
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 57
caattaaccc tcactaaagg g 21

<210> 58
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 58
cggaattcat gaataatgat gatactaatt c 31

<210> 59
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 59

ccgctcgagg gatattagct tgtcttgcga tttc 34

<210> 60
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 60
cgggatcctg ggaggggcgg ccacaggagc tg 32

<210> 61
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 61
cggaattcag tcagaactga gcgtgatcc 29

<210> 62
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 62
cgggatccaa gcagcgagag gccgaggcca cgg 33

<210> 63
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 63
cggaattcag tcagaactga gcgtgatcc 29

<210> 64
<211> 28
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

<400> 64
acattaggta cttagctaat taaatgtg 28

<210> 65
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 65
cacatttaat tagctaagta cctaatgt 28

<210> 66
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 66
acattaggta cttggcgcgc caaatgtg 28

<210> 67
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 67
cacatttggc gcgccaagta cctaatgt 28

<210> 68
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 68
cgggatccat gctggatcgg gatgtgggcc caac 34

<210> 69
<211> 32
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 69
cggaattccg tcttctgctc cctggagctg tg 32

<210> 70
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 70
cggaattcta caacacctcg cccaagccgg 30

<210> 71
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 71
cggaattcgg aacgaggggc ccttgac 27

<210> 72
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 72
gatccaaaag gaaatgagag a 21

<210> 73
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 73
cagtgcaggt ggtacacgaa gtcct 25

<210> 74
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 74
cagtgcaggt ggtacacgaa gtcct 25

<210> 75
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 75
ggacaaggac agcgttcag 19

<210> 76
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 76
ctcccgtaga ggccattg 18

<210> 77
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Probe

<400> 77
ttccccgatg agccttcctt ggcggaa 27

<210> 78
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 78

cggaattcta caacacctcg cccaagccgg 30

<210> 79
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 79
cggaattcgg aacgaggggc ccttgac 27

<210> 80
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 80
cgggatccga tcgcttcggc agcagctg 28

<210> 81
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 81
cgggatcctt gatatttacc ccggaggc 28

<210> 82
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 82
gcgaagcttg gaactgagcg tggtctacct ca 32

<210> 83
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 83
tacaagcttc gcgatgctgc tggaaacgg 29

<210> 84
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 84
tacaagctta ccatggaggc gcgcgggga 29

<210> 85
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 85
cccggtacca actgagcgtg gtctacctc 29

<210> 86
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 86
ggacaaggac agcgttcag 19

<210> 87
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 87
ctcccgtaga ggccattg 18

<210> 88
<211> 28

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 88
cgggatccat gctgctggaa acggggct 28

<210> 89
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 89
cgggatccat ggaggcgcgc ggggagct 28

<210> 90
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 90
cggaattctc agaactgagc gtggtcta 28

<210> 91
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 91
tggtcacagc ctgcacacat 20

<210> 92
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 92
aaccactgga ttagtgactg 20

<210> 93
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 93
gaagttcagg gtcggaggg 19

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 94
tggtcacagc ctgcacacat 20

<210> 95
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 95
cagaaaatta attaattgta a 21

<210> 96
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 96
cgggatccat gctgctggaa acggggct 28

<210> 97
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 97
cggaattctc agaactgagc gtggtcta 28

<210> 98
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 98
cgggatccat ggaggcgcgc ggggagct 28

<210> 99
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 99
cggaattctc agaactgagc gtggtcta 28

<210> 100
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 100
acattaggta cttagctaat taaatgtg 28

<210> 101
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 101
cacatttaat tagctaagta cctaatgt 28

<210> 102
<211> 192
<212> DNA
<213> Homo sapiens

<400> 102
tcttccggga gaggcccccc cctctcccca gaccacaggg ggcctctctg cctccagccc 60
caccttcccc gggagaagct ttccccaatc cccaggtctc tagatcattc tgttctcgag 120
tatcctgtgg aggaggcaaa aatgcctggc gccccttctc tccaagctca attctctaag 180
cccctcaggg tc 192

<210> 103
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 103
caaccgctgt cccgcactct t 21

<210> 104
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 104
gaaagttcgg gactggagag t 21

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 105
cagtgccaca acctcactca 20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 106
tacgaggtga cccagaactt 20

<210> 107
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 107
cctggccttg gtgattgtga 20

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 108
tttcagacca ggaaaggtgg 20

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 109
cgaaatgagc ctcgcgcttc 20

<210> 110
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 110
gctgccgcgc ctcaccgct 19

<210> 111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 111
aggagtccac taactccatg 20

<210> 112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 112
cgctgactga gcctctgctt 20

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 113
cctcgtgtga ggtgcagggt 20